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CORRESPONDENCE CONTROL
OUTGOING LTR NO

DOE ORDER # 47001

94 RF 04415

EG&G ROCKY FLATS

DIST	TR	ENC
AMARAL, M E		
BERMAN, H S		
BRANCH, D B		
CARNIVAL, G J		
COPP, R D		
DAVIS, J G		
FERRERA, D W		
HANNI, B J		
HARMAN, L K		
HEALY, T J		
HEDAH, T		
HILBIG, J G		
HUTCHINS, N M		
KELL, R E		
KIRBY, W A		
KUESTER, A W		
MAHAFFEY, J W		
MANN, H P		
MARX, G E		
MCDONALD, M M		
McKENNA, F G		
MONTROSE, J K		
MORGAN, R V		
POTT, R, G L		
IZZUTO, V M		
RISIN, T L		
SANDLIN, N B		
TETLOCK, G H		
STEWART, D L		
TIER, S G		
SULLIVAN, M T		
SWANSON, E R		
WILKINSON, R B		
WILSON, J M		
WYANT, R D		
ROSBY	X	X
PRIMROSE	X	X
SIDERS	X	X
HOUK	X	X

EG&G ROCKY FLATS INC

ROCKY FLATS PLANT P O BOX 464 GOLDEN COLORADO 80402 0464 (303) 966 7000

April 15 1994

94 RF 04415

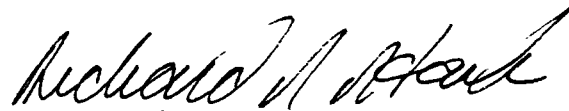
Scott R Grace
Environmental Restoration Division
DOE/RFO

Attn Tim Reeves

MEETING MINUTES FOR THE MARCH 21 1994 MEETING CONCERNING MANGANESE AND
ANTIMONY AT OPERABLE UNIT (OU) 1 - RZH 010 94

A meeting was held on March 21 1994 between the Department of Energy/Rocky Flats
Office (DOE/RFO) the Environmental Protection Agency EG&G Rocky Flats Inc and
various subcontractors to discuss the occurrence of manganese and antimony in groundwater
in OU 1 Minutes from this meeting are attached for your information

Please contact me at extension 8714 for additional information



R Zeke Houk
Operable Unit 1 Project Manager
Remediation Project Management

ALP jlm

Orig and 1 cc - S R Grace

Attachment
As Stated

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ADMIN RECORD

**MEETING NOTES FOR THE OPERABLE UNIT (OU) 1 MEETING
CONCERNING MANGANESE AND ANTIMONY
MARCH 21 1994**

Attendees

Gary Kleeman EPA	Bonnie Lavelle EPA
Tim Reeves DOE/RFO	Scott Grace DOE/RFO
Mary Siders EG&G	Annette Primrose EG&G
Mike Anderson Weston	Fred Duncan Dames and Moore

Presentation of Statistical Results

The statistical analyses were presented for antimony and manganese (see attached) There are statistically significant differences for these metals between the background and OU 1 data sets However the different statistical tests yield conflicting results as to significance Spatial/temporal relationships must be examined to make a professional judgement of the significance of the results of the statistical tests Manganese and antimony may not be contaminants

There are a high percentage of nondetects for antimony This makes inferential statistical tests less accurate Results of inferential statistics are not as meaningful with this percentage of nondetects

Conclusion Statistics show significant differences Now professional judgement must be used to interpret results

EPA Question Then why should we do statistical comparisons?

Response All data must be considered when making a decision For example

- A line defining the presence of caliche deposits exists north south across the plant in the middle of RFP
- More precipitation of west side of plant
- More evapo transportation on east side of plant

EPA Response If manganese and antimony are to be excluded strong arguments such as above must be presented and adequately defended

Nature and Extent Discussion

Manganese is higher in the bedrock not in the colluvium Examining the plot of well 37191 (attached) shows an initial high manganese value This may be a well development problem Is this was truly a contaminant why did the manganese dissipate?

EPA Question Do the TDS and TSS values correlate with high manganese?
Response We are checking on this

On well 37191 the initial sample contained higher levels of both antimony and manganese. There must be something unusual about this first sample. Other wells were plotted and most values were below background levels.

EPA Question Was the first sample taken in a wet year? How was the well developed?
Response This information will be obtained

The quantities of antimony are the same in both colluvium and bedrock wells. These should be different if this was a contaminant. In addition, the data do not indicate the presence of a plume and the distribution of hits is not indicative of contamination. Based on this information, clean up goals could not be reached.

EPA Response There seems to be a misunderstanding of the purpose of COCs. These are not used in the Feasibility Study (FS).

DOE/EG&G Comment If these are considered contaminants, then these must be considered in the FS. RAGS states that chemicals not suspected as being contaminants can be dropped off the COC list and then considered later under the uncertainty analysis. These chemicals would not be on the COC list.

EPA Comment These chemicals could also be carried through the risk assessment and then eliminated later.

DOE/EG&G Response RAGS states that these chemicals not suspected as being contaminants must be eliminated before they are placed on the COC list.

EPA Response Better arguments must be developed to eliminate antimony and manganese. Can the risk be calculated?

DOE/EG&G Response Yes. The risk will be calculated and put in the uncertainty analysis. In addition, it will be stated how these will impact the overall risk.

In addition, a report is being prepared on the occurrence of antimony and manganese. This report will discuss the geology, statistics, background data, and other information available. This report can either be attached to the RFI/RI Report as an appendix or submitted separately.

EPA Response That is what is needed. Rigorous arguments are required in order to exclude these chemicals.

Additional Antimony Data Presented

There is evidence that when the ICP method is used to analyze samples high aluminum values can interfere with the antimony results producing falsely high values. Some research has been done on this aspect and high antimony is seen to correlate with high aluminum values in the OU 1 groundwater samples. However more work needs to be done on this.

Selenium Discussion

Concentrations of selenium above the risk limits are upgradient of the French Drain. These concentrations are higher in the bedrock than in the colluvium which is opposite of what would be expected if selenium was a contaminant. In addition only 75 gallons of water per quarter are collected from the French Drain.

EPA Comment: Why is a risk assessment being done for drinking groundwater if not enough exists to drink? Is there something wrong with the collection well?

RFP Response: Yes. We will discuss the collection well problem later.

Summary Discussion

EPA Discussion: This will set a precedent. Since the chemicals are above background we prefer that these be run through the COC process and then talk about or exclude them in the uncertainty analysis. However if it can be proven that these chemicals are not contaminants then this point must be proven and documented very well. Information such as the aluminum peaks interfering with antimony in ICP analysis etc must be provided. We still prefer including these chemicals as COCs and mentioning that there is a question whether they are contaminants. It seems that RFP does not. However risk will be calculated either way.

RFP Response: We are concerned that if these are called contaminants this label can never be removed. We will put the risks calculated for these chemicals both in the risk assessment summary in the RFI/RI Report and in a note in Appendix D. These will be primarily addressed in the uncertainty analysis. Specifically

- Antimony and manganese will be in the risk assessment summary with a note as to why these were not included in the COC list. This will eliminate digging reason out of appendix D.
- There will be a report provided with a good rationale for eliminating these chemicals from the COC list. This report will be summarized in the RFI/RI Report.

EPA Comment	EPA agrees. However, do not arbitrarily depart from guidelines. We are bothered by not using chemicals that significantly depart from background as COCs. In addition, the Gilbert Approach seems to be superseded by professional judgement and professional judgement seemed limited to temporal and spatial analysis only. However, the geologic and other reasons provided today do seem like valid arguments.
DOE Conclusion	We intend to improve the reasoning for dropping antimony and manganese from the COC list and then request concurrence. We also intend to go forward on the RFI/RI Report and we will write a letter requesting concurrence.
EPA Response	We agree in principle. If the supporting arguments are strong enough, these chemicals will not be required on the COC list. The report on manganese and antimony may not need to be part of the RFI/RI Report as it will already be part of the record. However, EPA must see this report before the RFI/RI Report is finalized.